

Express Mail No.: EV720060719US

Deposited On: 01/20/2006

Approved for use through 07/31/2006. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PTO/SB/21 (09-04)

**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number

10/689,258

Filing Date

10/20/2003

First Named Inventor

Daniel E. Resasco et al.

Art Unit

1754

Examiner Name

S. Hendrickson

Attorney Docket Number

5820.640

**ENCLOSURES (Check all that apply)**

Fee Transmittal Form



Fee Attached



Amendment/Reply



After Final



Affidavits/declaration(s)



Extension of Time Request



Express Abandonment Request



Information Disclosure Statement



Certified Copy of Priority Document(s)

Reply to Missing Parts/  
Incomplete ApplicationReply to Missing Parts  
under 37 CFR 1.52 or 1.53

Drawing(s)



Licensing-related Papers



Petition

Petition to Convert to a  
Provisional ApplicationPower of Attorney, Revocation of POA,  
Change of Correspondence Address

Terminal Disclaimer



Request for Refund



CD, Number of CD(s) \_\_\_\_\_

☐ Landscape Table on CD

After Allowance Communication to TC

Appeal Communication to Board  
of Appeals and InterferencesAppeal Communication to TC  
(Appeal Notice, Brief, Reply Brief)

Proprietary Information



Status Letter

Other Enclosure(s) (please identify  
below):

See Below

**Remarks**

1. Transmittal Form (1 page);
2. Third Supplemental IDS (3 pages);
3. Third Supplemental Form 1449 (5 pages);
4. Copies of foreign and non-patent documents; and
5. Postcard.

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name

DUNLAP, CODDING &amp; ROGERS, P.C.

Signature

Printed name

Christopher W. Corbett

Date

01/20/2006

Reg. No.

36,109

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below: \*\*\* SENT BY EXPRESS MAIL, DATED 01/20/2006 \*\*\*

Signature

Typed or printed name

Christopher W. Corbett

Date

01/20/2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**EXPRESS MAIL NO.: EV720060719US**

**Deposited On: January 20,, 2006**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Application No. : 10/689,258 Confirmation No.: 2882**

**Applicant(s) : Daniel E. Resasco, Walter E. Alvarez,  
Jose E. Herrera and Leandro Balzano**

**Filed : 10/20/2003**

**TC/A.U. : 1754**

**Examiner : S. Hendrickson**

**Title : METHOD FOR PRODUCING SINGLE WALLED  
CARBON NANOTUBES**

**Docket No. : 5820.640**

**Customer No. : 30589**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**THIRD SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

**List of Sections Forming Part of This  
Information Disclosure Statement**

The following sections are being submitted for this Information Disclosure Statement:

1. [X] Preliminary Statements
2. [X] FORM PTO-1449 (Modified)
3. [X] Statement as to Information Not Found in Patents or Publications

4. ☒ Copies of Listed Information Items Accompanying this Statement
5. ☒ Identification of Person(s) Making this Information Disclosure Statement

### **Section 1. Preliminary Statements**

Applicants submit herewith patents, publications or other information of which they are aware, which they believe may be material to the examination of this application and in respect of which there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

### **Section 2. Form PTO-1449 (Modified)**

☒ A completed Form 1449 (Modified) is attached hereto.

☐ No Form 1449 (Modified) is attached.

### **Section 3. Statement as to Information Not Found in Patents or Publications (Information Not Listed in Form PTO-1449)**

### **Section 4. Copies of Listed Information Items Accompanying this Statement**

Legible copies of all items listed in Form PTO-1449 (Modified) accompany this information disclosure statement.

☒ Exceptions to the above:

- ☒ [X] As this application is being filed after June 30, 2003, no copies of cited U.S. patents or patent application publications are submitted herewith.
- ☒ [X] Regarding the foreign patents and publications and the non-patent documents listed, legible copies of such items are attached hereto.

**Section 5. Identification of Person(s) Making this INFORMATION DISCLOSURE STATEMENT**

The person making this statement is the attorney who signs below on the basis of the information:

- ☐ [ ] supplied by the inventor(s)
- ☐ [ ] supplied by an individual associated with the filing and prosecution of this application (37 C.F.R. § 1.56(c)).
- ☒ [X] in the attorney's file

Respectfully submitted,



Christopher W. Corbett, Reg. No. 36,109  
DUNLAP, CODDING & ROGERS, P.C.  
P.O. Box 16370  
Oklahoma City, Oklahoma 73113  
(405) 607-8600 - telephone  
(405) 607-8686 - telefax

Agent for Applicants



Express Mail: EV72006071905  
Date Deposited: 01/20/2006

Substitute for form 1449A/PTO

# **THIRD SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Complete if Known	
Application Number	10/689,258
Filing Date	10/20/2003
First Named Inventor	Daniel E. Resasco et al.
Group Art Unit	1754
Examiner Name	S. Hendrickson
Attorney Docket Number	5820.640

U. S. PATENT DOCUMENTS						
EXAM INIT.	Cite No. 1	U.S. PATENT NUMBER Number	Kind Code <sup>2</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM- DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5424054		Bethune	06/13/1995	
		5456897		Moy et al.	10/10/1995	
		5500200		Mandeville et al.	03/19/1996	
		5747161		Iijima	05/05/1998	
		6099965		Tennent et al.	08/08/2000	
		6221330		Moy et al.	04/24/2001	
		6312303		Yaniv et al.	11/06/2001	
		6401526		Dai et al.	06/11/2002	
		6413487		Resasco et al.	07/02/2002	
		6426134		Lavin et al.	07/30/2002	
		6432866		Tennent et al.	08/13/2002	
		6479939		Yaniv et al.	11/12/2002	
		6573643		Kumar et al.	06/03/2003	
		6580225		Yaniv et al.	06/17/2003	
		6596187		Coll et al.	07/22/2003	
		6599961		Pienkowski et al.	07/29/2003	
		6664722		Yaniv et al.	12/16/2003	
		6656339		Talin et al.	12/02/2003	

U. S. PATENT DOCUMENTS						
EXAM INIT.	Cite No. 1	<u>U.S. PATENT NUMBER</u> Number	Kind Code <sup>2</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM- DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6683783		Smalley et al.	01/27/2004	
		6699457		Cortright et al.	03/02/2004	
		6752977		Smalley et al.	06/22/2004	
		6761870		Smalley et al.	07/13/2004	
		6936233		Smalley et al.	08/30/2005	
		6939525		Colbert et al.	09/06/2005	
		60/101093		Smalley et al.	09/18/1998	
		60/106917		Smalley et al.	11/03/1998	
		60/114588		Smalley et al.	12/31/1998	
		60/117287		Smalley et al.	01/26/1999	
		60/161728		Smalley et al.	10/27/1999	
		2002/0084410		Colbert et al.	07/04/2002	
		2002/0094311		Smalley et al.	07/18/2002	
		2002/0096634		Colbert et al.	07/25/2002	
		US2002/0127171A1		Smalley et al.	09/12/2002	
		2002/0159944		Smalley et al.	10/31/2002	
		US2003/0077515A1		Chen et al.	04/24/2003	
		US2003/0089893A1		Niu et al.	05/15/2003	
		US2003/0147802A1		Smalley et al.	08/07/2003	
		US2003/0175200A1		Smalley et al.	09/18/2003	
		US2003/0180526A1		Winey et al.	09/25/2003	
		US2004/0009346A1		Jang et al.	01/15/2004	
		US2004/0028859A1		LeGrande et al.	02/12/2004	

## FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. 1	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office 3	Number 4	Kind Code <sup>5</sup> (if known)				
			PCT/US03/19664		International Search Report	03/31/2004		
			WO 00/26138		PCT/US	05/11/2000		
			WO 02/060813A2		PCT/US	08/08/2002		
			WO 03/048038		PCT/US	06/12/2003		
			WO 04/001107		PCT/US	12/31/2003		
			EP 01 93 9821		European Search Report	06/09/2004		
			EP 0 945 402 A1		SHIMADZU CORP; Res. Inst. Innovative Tech. Earch	09/29/1999		
			JP 06/228824		Japanese Patent			X
			JP 11/139815		Japanese Patent	05/25/1999		X

**U.S. and Foreign:** <sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard St.3). <sup>4</sup>Form Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard St. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

## PATENT DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published

EXAM INIT.		
		ANDERSON et al., "50 nm Polystyrene Particles via Miniemulsion Polymerization", <i>Macromolecules</i> , American Chemical Society, vol. 35, pp. 574-576, 2002.
		BANDOW ET AL., "Purification of Single-Wall Carbon Nanotubes by Microfiltration," <i>J.Phys.Chem.B</i> , Vol. 101, (1997) pp 8839-8842.
		BOWER et al., "Deformation of Carbon Nanotubes in Nanotube-Polymer Composites", <i>Applied Physics Letters</i> , vol. 74, no. 22, pp. 3317-3319, 05/31/1999.
		CADEK et al., "Mechanical and Thermal Properties of CNT and CNF Reinforced Polymer Composites", <i>Structural and Electronic Properties of Molecular Nanostructures</i> , American Institute of Physics, pp. 562-565, 2002.

EXAM INIT.		<p style="text-align: center;"><b>PATENT DOCUMENTS</b></p> <p style="text-align: center;">Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published</p>
		CHATTOPADHYAY, et al., "A Route for Bulk Separation of Semiconducting from Metallic Singel-Wall Carbon Nanotubes", Journal of American Chemical Society, Vol. 125, No. 11, pp. 3370-3375, 2003.
		CHEN et al., "Bulk Separative Enrichment in Metallic or Semiconducting Single-Walled Carbon Nanotubes", Nano Letters, xxxx Vol. 0, No. 0, page est: 4.9 A-E.
		CHEN et al., "Dissolution of Full-Length Single-Walled Carbon Nanotubes", J. Phys. Chem. B, vol. 105, pp. 2525-2528, 2001.
		DENG et al., "Hybrid Composite of Polyaniline Containing Carbon Nanotube", Chinese Chemical Letters, vol. 12, pp. 1037-1040, 2001.
		FRANCO et al., "Electric and magnetic properties of polymer electrolyte/carbon black composites", Solid State Ionics 113-115, pp. 149-160, 1998.
		GASPAR et al., "The influence of Cr precursors in the ethylene polymerization on Cr/SiO <sub>2</sub> catalysts", Applied Catalysis A: General, vol. 227, pp. 240-254, 2002.
		GONG et al., "Surfactant-Assisted Processing of Carbon Nanotube/Polymer Composites", Chemical Material, vol. 12, pp. 1049-1052, 2000.
		HAMON et al., "End-group and defect analysis of soluble single-walled carbon nanotubes", Chemical Physics Letters, vol. 347 pp. 8-12, 2001.
		HWANG et al., "Carbon nanotube reinforced ceramics", Journal of Materials Chemistry, vol. 11, pp. 1722-1725, 2001.
		JIN et al., "Alignment of Carbon nanotubes in a polymer matrix by mechanical stretching", Applied Physics Letters, vol. 73, no. 9, pp. 1197-1199, 08/31/1998.
		LANDFESTER et al., "Miniemulsion polymerization", 6/4/2003, <a href="http://www.mpikg-golm.mpg.de/kc/landfester/">http://www.mpikg-golm.mpg.de/kc/landfester/</a> , 1-22
		LANDFESTER, "Polyreactions in Miniemulsions", Macromol. Rapid Commun., vol. 22, no. 12, pp. 896-936, 2001.
		LANDFESTER, "The Generation of Nanoparticles in Miniemulsions", Advanced Materials, vol. 13, no. 10, pp. 765-768, 05/17/2001.
		MCCARTHY et al., "A Microscopic and Spectroscopic Study of Interactions between Carbon Nanotubes and a Conjugated Polymer", J. Phys. Chem. B, vol. 106, pp. 2210-2216, 2001.





EXAM INIT.	PATENT DOCUMENTS	
	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	
	NIYOGI et al., Communications to the Editor, "Chromatographic Purification of Soluble Single-walled Carbon Nanotubes (s-SWNTs)", J. Am. Chem. Soc., vol. 123, pp. 733-734, 2001.	
	Patent Abstracts of Japan, Vol. 1996, no. 12, December 26, 1996, and JP 0 8 198611 A (NEC CORP), Aug. 6, 1996, Abstract.	
	POMPEO et al., "Water Solubilization of Single-Walled Carbon Nanotubes by Functionalization with Glucosamine", Nano Letters, American Chemical Society, vol. 2, no. 4, pp. 369-373, 2002.	
	QIAN et al., "Load transfer and deformation mechanisms in carbon nanotube-polystyrene composites", Applied Physics Letters, American Institute of Physics, vol. 76, no. 20, pp. 2868-2870, 05/15/2000.	
	RAZAVI, "Metallocene catalysts technology and environment", Chemistry 3, pp. 615-625, 2000.	
	SEARS et al., "Raman scattering from polymerizing styrene. I. Vibrational mode analysis <sup>a)</sup> ", J. Chem. Phys., vol. 75, no. 4, pp. 1589-1598.	
	SHAFFER et al., "Fabrication and Characterization of Carbon Nanotube/Poly (vinyl alcohol) Composites**", Advanced Materials, vol. II, No. 11, pp. 937-941, 1999.	
	TAHJI et al., "Purification Procedure for Single-Wall Nanotubes", J. Phys. Chem. B, Vol. 101, pp. 1974-1978 (1997).	
	TIARKS et al., "Encapsulation of Carbon Black by Miniemulsion Polymerization", Macromol. Chem. Phys., vol. 202, pp. 51-60, 2001.	
	TIARKS et al., "Silica Nanoparticles as Surfactants and Fillers for Latexes Made by Miniemulsion Polymerization", Langmuir, American Chemical Society, vol. 17, pp. 5775-5780, 2001.	
	ZHAO, et al., "Chromatographic Purification and Properties of Soluble Single-Walled Carbon Nanotubes", American Chemical Society, Page Est: 4.1, pp. A-E, 02/22/2001.	
	ZHU et al., "Direct Synthesis of Long Single-Walled Carbon Nanotube Strands", Science, vol. 296, pp. 884-886, 05/13/2002.	
<b>Non Patent Documents:</b> <sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.		
Examiner Signature:		Date Considered:
EXAMINER: Initial if citation considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant. **Place of Publication refers to name of publication in which the information was published.		